

On page 10, please insert the following heading above the Table at the top of the page.

TABLE 2

On page 13, please replace TABLE 2 with the following:

TABLE 3			
Sample #	Benzene, mL	Acetonitrile, mL	Phenol, g
1	5	5	0
2	5	5	0.0209
3	5	5	0.0956
4	5	5	0.1624
5	5	5	0.2041
6	5	5	0.3397
7	5	5	0.7132

#### REMARKS

Currently, claims 1-36 are pending in the application with claims 22-36 withdrawn from consideration. Claim 14 stands rejected under 35 U.S.C. § 112, second paragraph. Also, claims 1-5, 12, and 16-20 stand rejected as allegedly anticipated under 35 U.S.C. § 102(b), and claims 6-11, 13, 14, 15 and 21 stand rejected as allegedly unpatentable under 35 U.S.C. § 103(a).

Applicants amend the specification to correct a typographical error at line 20 of page 6 in which computer 70 of Figure 1 is described as computer 60. The computer is designated as 70 elsewhere in the specification. See *e.g.* page 6, lines 1 and 19. The amendments to pages 10 and 13 correct a lack of numbering for the second Table (on page 10). Thus, the table on page 10 is TABLE 2, and the table on page 13 is TABLE 3.

The amendment of claim 1 describes that under the conditions used in Applicants' invention, the signal from the sensor is measured as a variation in the concentration of analyte vapor at the surface of the sensor, and that this variation in concentration is temporally defined. The temporal nature of the sensor response is described in the specification at page 5, lines 13-27 and page 11, lines 20-22, as well as by Figures 2-4

and associated text in Example 1 (page 10, line 8 to page 11, line 12). The amendment of claim 14 corrects the claim as depending from claim 13 rather than claim 10 and is supported by the originally filed claim and the specification at page 6, lines 12-25 describing the flow of the inert (*i.e.* analyte-free) carrier gas. New claim 37 describes an aspect of the invention wherein the signal from the sensor element is monitored as a function of time, and is supported by original claims 1 and 17, Figures 2-4, and in the specification at *e.g.*, page 10, line 8 to page 11, line 12 (Example 1). New claims 38 and 39 describe the use of an analyte-free inert carrier gas, and are supported by originally filed claims 13 and 20 and the specification at page 6, lines 12-25. New claim 40 describes an aspect of the invention wherein a purge step is included. The use of a purge step is described in the specification, *e.g.* at page 6, lines 24-25, page 10, lines 4-7, and page 13, lines 3-9 (Example 3). Support for new claims 41, 42 and 43 is provided by original claims 5, 6 and 12, respectively, and in the specification, *e.g.* at page 6, line 26 to page 7, line 16 (describing quartz sensors and sensors coated with chemically sensitive films), and Example 1 (describing measurements using a sensor array). Support for new claims 44 and 45 is provided by originally filed claims 2 and 3. Accordingly, no new matter has been added.

**The Rejection of Claim 14 Under 35 U.S.C. § 112, Second Paragraph, is Traversed or Rendered Moot**

The Examiner rejected claim 14 as having insufficient antecedent basis for the limitation of “said inert carrier gas”. Office Action at page 2, ¶ 3. Claim 14 is amended to depend from claim 13 rather than claim 10. Thus, Applicants respectfully assert that as amended, claim 14 has sufficient antecedent basis for the limitation of “said inert carrier gas”.

**The Rejection of Claims 1-5, 12, and 16-20 Under 35 U.S.C. § 102(b) is Traversed or Rendered Moot**

The Examiner rejected claims 1-5, 12, and 16-20 as allegedly anticipated by U.S. Patent No. 4,818,348 to Stetter (Stetter ‘348). The Examiner, in asserting that Applicants’ invention is anticipated by Stetter, stated that: “[t]he sensor of Stetter ‘348 is

not substantially sorbent as it facilitates compounds passing through one or more filters.” It is not clear to Applicants how Stetter ‘348 anticipates Applicants’ invention. Applicants are not claiming non-sorbent sensors, but that the sample does not contact a substantially sorbent material before contacting the sensor element.

Stetter ‘348 describes presentation of a sample to an array of at least two sensors wherein the sensors of the array are designed to have different responses to various chemical entities, such that a distinct pattern of electrical responses is generated depending upon the chemical being measured and the sensor employed. The pattern of responses so generated is then compared to a database of patterns for known substances. Stetter ‘348 describes that the number of possible responses may be increased by changing conditions associated with the sensors by using “conversion means”. It is the use of conversion means that allows the device in Stetter ‘348 to measure complex mixtures using a relatively small array of sensors, as for example where the number of responses would exceed the number of sensors. Stetter ‘348, claim 1.

Applicants respectfully assert that Stetter ‘348 does not anticipate Applicants’ claimed invention. As amended, claim 1 of Applicants’ invention describes a method for rapidly screening volatile substances in a sample, the method comprising the steps of:

- (a) introducing a volume of the sample into a vapor delivery line;
- (b) volatilizing at least a portion of said volume as said volume is carried through said vapor delivery line;
- (c) contacting at least a portion of said volatilized volume with a sensor element, wherein said volume does not contact a substantially sorbent material before contacting said sensor element; and
- (d) monitoring a signal from the sensor element wherein said signal comprises the response of said sensor to a temporally-determined variation in the concentration of said vapor at said sensor surface.

In contrast to Applicants’ invention, Stetter ‘348 describes a stopped-flow measurement of samples, wherein the samples are first completely volatilized and then transferred to the sensors for measurement. See *e.g.*, Stetter ‘348 Figures 8 and 9, showing a single data point from each measurement. In the method of Stetter ‘348, samples are distinguished by the use of conversion means. The conversion means of

Stetter '348 include changing the properties of the sample as well as the properties of the sensors to thereby distinguish individual components of a mixture. Still, regardless of the type of conversion means employed, each sample is measured such that the response of the sensor is presented as a single data point.

In contrast to Stetter '348, Applicants describe a dynamic, temporally dependent measurement of a kinetically generated vapor pulse under a constant flow of analyte-free gas such that the response of the sensor is dependent upon a temporally-determined variation in the concentration of sample vapor at the surface of the sensor. Thus, Applicants' invention describes introduction of a small amount (1-2 uL) of a liquid reaction sample into the system, followed by rapid evaporation of different volatile components in the sample (preferably at room temperature) and dynamic measurement of the vapor pulse. Using the methods and apparatus described in Applicants' invention, the sensor response is temporally modulated to dynamically discriminate between different organic vapors of interest. The difference between the two types of measurements is apparent upon comparison of the results obtained using each technique. Thus, Stetter '348 describes generation of a single data point per measurement regardless of the type of conversion means used (Stetter '348, Figures 8 and 9), whereas Applicants' invention provides a signal response comprising multiple data points (a time decay function) for individual components. See *e.g.*, the specification at Figures 2-4.

Applicants' invention is distinct from the sensor of Stetter '348 and other previously described methods in that it does not provide any chemical separation steps (*i.e.* sorbent interactions) prior to measurement with a sensor. Instead, the sensors of Applicants' invention produce a temporal separation of chemical compounds for distinguishing specific chemical entities. Notably, it is by measuring both the temporal modulation of the concentration of analyte vapor as well the magnitude of the response that makes the robust identification and quantification of individual components in multi-component mixtures possible. See *e.g.*, the specification at page 5, lines 13-27 (describing measuring the temporal profile as well as the magnitude of the response to provided increased information per sensor) and at page 12, lines 3-23 and Example 2 (describing the application of multivariate regression techniques to the analysis of sensor signals).

Thus, in contrast to Stetter '348 which relies on conversion means to reduce the number of sensors required, Applicant describes the use of kinetically based measurements to provide increased information per sensor. Without the dynamic (temporal) aspect of measurement described by Applicants, much less information would be obtained from the measurement of the samples, thus precluding the use of robust multivariate analysis.

The Examiner stated that "the method [of Stetter '348] further comprises conversion means where characteristics such as flow rate (function of time) is measured." Office Action at page 3, ¶ 2. Applicants respectfully assert that although Stetter does mention altering flow rate, this does not equate to measurement of sample constituents wherein the signal comprises the response of the sensor "as a function of time." Although Stetter '348 describes that the flow rate of delivery of the sample to the sensor may be varied, there is no description in Stetter of dynamic measurement of samples by the sensors. Thus, there is no absolutely no teaching in Stetter '348 of using both the amplitude of the sensor signal and the kinetics of the signal response to distinguish sample components as is described by Applicants' invention.

Applicants' invention may be further distinguished from Stetter '348 in that Applicants claim and describe a kinetic volatilization step, wherein the sample is volatilized as it is "carried through said vapor delivery line." See claim 1, step (b). This embodiment is supported by the specification, where it is described that the length of the delivery line is chosen such that substantial amounts of the volatile components evaporate before entering a sensor array. See the Specification at page 6, lines 4-11. Although Applicants' invention contemplates the use of a heating coil external to the delivery line, (the specification at page 6, lines 8-11), such a coil does not alter the method of volatilization, which occurs as the sample moves through the delivery line.

In contrast, Stetter '348 describes volatilization as placing a sample in a sample tube into a heating block which is a sealed chamber. Stetter '348 describes "the vapor generator of the invention" as comprising block 26 having sealed chamber 27 and a heating coil 29 into which a single sample in a sample tube 28 is placed for evaporation while in the chamber. Stetter '348 at col. 5, lines 10-40. Thus, Stetter '348 describes that "[t]he chamber 27 serves as a location for vaporizing and *holding* the sample." Stetter

'348 at col. 5, lines 58-59 (emphasis added). The sample is heated in the sealed chamber to vaporize the sample and the vapor then passively travels, or is pumped, to at least two sensors.

Nowhere in Stetter '348 is there a description of a sample being vaporized as it travels towards the sensor. Claim 9 of Stetter '348 describes "means for changing solids to liquids or gases." Still the only embodiment for vaporizing samples is the vaporizer comprising a stationary heating step as described above. The vaporizer of Stetter '348 is designed for the measurement of individual samples, each of which may comprise a complicated profile requiring sensor array analysis. Thus, Stetter '348 does not address the issue of rapid sample volatilization designed for processing multiple small samples, which is the method of volatilization described and claimed in Applicants' invention. Instead, Stetter '348 describes placing an individual sample in a chamber, sealing the chamber, heating the sample, transferring the vapors to a sensor once the heating step has been completed, turning off the heating filament, and removing the individual sample tube.

Finally, Applicants note that the filters described in Stetter '348 (before the step of contacting the sensors) are in fact substantially sorbent, in that filters prevent movement of sample components which pass through the filter at different rates. Also, the use of sensors in sequential arrangement (*i.e.* a sample travels from sensor 1 to sensor 2 to sensor 3, etc) as described in Stetter '348 inherently comprises a sorbent interaction of the sample with sensor (n), prior to its interaction with sensor (n+1), since the interaction of a sample will alter the sample by a transfer of energy and analyte from the sample to the sensor.

Thus, Applicants respectfully assert that claim 1 is not anticipated by Stetter '348 under 35 U.S.C. 102(b). Also because dependent claims 2-5, 12, and 16-20 require at least one element which is not described, either expressly or inherently by Stetter '348, dependent claims 2-5, 12, and 16-20 are not anticipated by Stetter.

**The Rejection of Claims 6-11, 13, 14, 15 and 21 Under 35 U.S.C. § 103(a) is Traversed or Rendered Moot**

The Examiner rejected claims 6-11, 13-15, and 21 as allegedly being obvious under 35 U.S.C. § 103(a). The Federal Circuit has stated that “[i]n order to render a claimed apparatus or method obvious, the prior art must enable one skilled in the art to make and use the apparatus or method.” *Motorola, Inc. v. Interdigital Technology Corp.*, 43 U.S.P.Q. 2d 1481, 1489 (Fed. Cir. 1997) (quoting *Beckman Instruments, Inc. v. LKB Produkter AB*, 13 U.S.P.Q. 2d 1301, 1304 (Fed. Cir. 1989)). Applicants respectfully assert that, in light of the foregoing amendment and following remarks, the references cited by the Examiner do not, alone, or in combination, render obvious Applicants’ claimed invention. Thus, none of the references, alone or in combination, teach the use of a method for rapidly screening volatile samples having the steps of volatilizing a sample as it travels through a vapor line and contacting at least a portion of the volatilized sample with a sensor prior to the vapor contacting a sorbent material and monitoring a signal from the sensor element wherein the signal comprises the response of the sensor to a temporally-determined variation in the concentration of the vapor at the sensor surface.

**A. Claims 6 and 21 (Stetter ‘348 and Vig ‘902)**

The Examiner rejected claims 6 and 21 under 35 U.S.C. §103(a) as being allegedly unpatentable over Stetter ‘348 in view of U.S. Patent No. 5,733,902 to Vig. Applicants note for the record that the patent to which the Examiner appears to be referring is apparently U.S. Patent No. 5,744,902 (there is no 5,733,902 to Vig), and that this patent is not included on the Examiner’s form PTO-892 included as part of Paper 6.

US 5,744,902 to Vig (Vig ‘902) discloses a chemical/biological sensor formed from a coated microresonator array. Vig ‘902 is based on the use of sensors for the simultaneous detection of mass (gravimetric) and temperature (calorimetric) changes upon exposure of the crystal to a compound. In an embodiment, the microresonator array comprises quartz crystals as sensors (microresonators). The Examiner notes that Stetter ‘348 fails to teach the use of quartz crystals as sensor elements, but argues that an indirect referral in Vig ‘902 that piezoelectric sensors may be made of materials other than quartz allows one to infer the quartz sensors of claim 6 of Applicants’ invention. Applicants note for the record that the Examiner did not provide a reasoning for the assertion that Stetter ‘348 in view of Vig renders claim 21 unpatentable under 35 U.S.C. §103(a).

Mere mention of quartz as a piezoelectric element in Vig cannot overcome the deficiencies of Stetter '348 to provide a description which would allow one to "make and/or use" Applicants' invention. The sensors in Vig are formulated to resonate in response to mass and temperature changes upon contact with an agent and thus, address a very different type of measurement than the sensors described in Applicants' invention. For example, Vig '902 teaches a quartz crystal that must be specially cut, sized and thermally isolated from the support of the apparatus, to be exquisitely sensitive to temperature. In contrast, Applicants' sensors are described to work at ambient temperature without error due to temperature fluctuations.

In addition, Applicants are unable to find in Vig '902 any mention of a sensor that monitors a measured property as a function of time (claim 21). Applicants respectfully assert that the microresonators of Vig '902 are essentially piezoelectric sensors. The use of piezoelectric sensors, while compatible with Applicants' invention, do not teach or suggest measurement of a temporally-determined variation of an analyte at the sensor surface.

Subsection 706.02(j) of the MPEP states that to establish a prima facie case of obviousness three criteria must be met:

- (i) a suggestion or motivation to modify or combine references;
- (ii) a reasonable expectation of success; and
- (iii) all the limitations in the claim(s) must be taught or suggested by the reference, or combination of references.

As there is no description in either Vig '902 or Stetter '348 of analyte measurement as a function of time, Applicants respectfully assert the Examiner has not made even a prima facie case of obviousness with respect to claim 21.

Thus, there is nothing in either reference alone, or in the references together, which suggests a method for rapidly screening volatile substances in a sample comprising the steps of volatilizing at least a portion of a sample as the volume is carried through a vapor delivery line and then contacting at least a portion of the volatilized volume with a quartz sensor (claim 6) or a quartz sensor having a chemically sensitive film proximate to the crystal (claim 21) wherein the volume does not contact a substantially sorbent material before contacting the sensor and monitoring a signal from the sensor element



wherein said signal comprises the response of said sensor to a temporally-determined variation in the concentration of said vapor at said sensor surface (claim 6) or as a function of time (claim 21). Thus, Applicants respectfully assert that claims 6 and 21 are not unpatentable under 35 U.S.C. 103(a) over Stetter '348 in view of Vig '902.

**B. Claims 10 and 11 (Stetter '348 and Mauze *et al.* '194)**

The Examiner rejected claims 10 and 11 under 35 U.S.C. §103(a) as being allegedly unpatentable over Stetter '348 in view of U.S. Patent 5,233,194 to Mauze *et al.*, ('Mauze *et al.* '194). Mauze *et al.* '194 discloses a gas sensor which employs a gas absorbing polymer wrapped around an optical element which guides radiation of selected wavelengths to the polymer. The sensors measure changes in the radiation signal upon absorption of gas in the sample by the polymer. Thus, the sensors described by Mauze *et al.*, '194 measure attenuation of radiation by sensor-absorbed CO<sub>2</sub> or the of quenching of fluorescence by sensor-absorbed O<sub>2</sub>. The Examiner stated that Mauze *et al.* '194 teaches coating a gas sensor with TEFLON AF to provide a sensor with reduced complexity and cost, which is rugged, lightweight and compact. Office Action at page 4, ¶ 6.

Applicants note, however, that although Mauze *et al.* '194 does describe the desirability of sensors that are rugged, lightweight and of low cost (Mauze *et al.* '194, col. 2, lines 11-15) there is no evidence this is due to the use of TEFLON AF as a coating for the sensors. More importantly, Mauze *et al.* '194 uses TEFLON AF only as a reflective layer and not as a sorbent layer. See Mauze *et al.* '194, col. 6, lines 41-59 and claims 18 and 22. As a reflective layer, the TEFLON AF does not produce a signal as a function of analyte concentration. In contrast, Applicants describe and claim the use of TEFLON AF as a sorbing layer responsible for producing an analytical signal. See *e.g.*, Applicants' claim 10 which depends on claim 5 describing TEFLON as a chemically sensitive film proximate the sensor surface, and Example 1 describing that the coating material on each sensor (*e.g.* TEFLON AF 1600) will determine sensitivity to various analytes.

Thus, there is nothing in either Stetter '348 or Mauze *et al.* '194 alone, or in combination, which suggests a method for rapidly screening volatile substances in a sample comprising introducing a volume of a sample into a vapor delivery line, volatilizing at least a portion of the sample as the volume is carried through the line,

contacting at least a portion of the volatilized volume with a sensor coated with an amorphous fluoropolymer (claim 10), such as a copolymer of tetrafluoroethylene and perfluoro-2,2-dimethyl-1,3-dioxole (claim 11), wherein the volume does not contact a substantially sorbent material before contacting the sensor and monitoring a signal from the sensor element wherein said signal comprises the response of said sensor to a temporally-determined variation in the concentration of said vapor at said sensor surface. Thus, Applicants respectfully assert that claims 10 and 11 are not unpatentable under 35 U.S.C. §103(a) over Stetter '348 in view of Mauze *et al.* '194.

**C. Claims 13, 14, and 15 (Stetter '348 and Ellzy '323)**

The Examiner rejected claims 13, 14 and 15 under 35 U.S.C. 103(a) as being allegedly unpatentable over Stetter '348 in view of U.S. Patent 5,719,323 to Ellzy (Ellzy '323). Thus, the Examiner stated that "Stetter '348 fails to teach that the sample volume is carried through the vapor delivery line by an inert carrier gas" and that "Ellzy '323 teach a method of determining the composition of a gaseous mixture in a vaporizer that comprises mixing the sample volume with a carrier gas." Office Action at page 5, ¶ 7.

Ellzy '323 discloses a method and system for measuring the decomposition of a gaseous material under controlled temperature and time conditions which is designed for the testing of pyrotechnic compositions. In Ellzy '323, a sample is vaporized in an enclosed chamber and then the test vapor is mixed with an inert gas and the mixed stream transferred to a second chamber for testing decomposition of the sample under different thermal conditions.

Similar to Stetter '348, Ellzy describes a two-step volatilization of the sample, whereby the sample of interest is volatilized in one step and then transferred to a second chamber for analysis of the volatilized constituents. There is nothing in either reference alone, or in the references together, which suggests a method for rapidly screening volatile substances in a sample comprising the steps of introducing a volume of a sample into a vapor delivery line, volatilizing at least a portion of the sample as the volume is carried through the line and using an inert gas to help carry the sample through the vapor delivery line; and then contacting at least a portion of the volatilized volume with a sensor, wherein the volume does not contact a substantially sorbent material before contacting the sensor and monitoring a signal from the sensor element wherein said

signal comprises the response of said sensor to a temporally-determined variation in the concentration of said vapor at said sensor surface. Thus, Applicants respectfully assert that claims 13, 14 and 15 are not unpatentable under 35 U.S.C. §103(a) over Stetter '348 in view of Ellzy. '323.

***D. Claims 7 and 9 (Stetter '348 and Gough '798)***

The Examiner rejected claims 7 and 9 under 35 U.S.C. §103(a) as being allegedly unpatentable over Stetter '348 in view of U.S. Patent 4,781,798 to Gough (Gough. '798). Gough '798 discloses a transparent electrochemical oxygen sensor for simultaneously determining oxygen concentration at different locations on a biological surface. The patent describes several types of oxygen-sensitive electrodes, including poly(dimethylsiloxane-carbonate) copolymer.

There is nothing in Gough '798 to correct the deficiencies of Stetter '348. The sensors of Gough are designed for a completely different application than Applicants' sensors. The sensors of Gough are used to measure oxygen at different locations on a biological surface, and thus inherently measure the oxygen *in situ* (i.e. at the sample surface), rather than vaporizing a sample in a vapor delivery line. Thus, there is nothing in either reference alone, or in the references together, which suggests a method for rapidly screening volatile substances in a sample comprising the steps of introducing a volume of a sample into a vapor delivery line and volatilizing at least a portion of the sample as the volume is carried through the line prior to contacting at least a portion of the volatilized volume with a sensor, wherein the sensor is coated with a hard-soft block elastomer (claim 7) such as dimethylsiloxane-carbonate copolymer (claim 9), and the volatilized volume does not contact a substantially sorbent material before contacting the sensor; and monitoring the signal from the sensor element wherein said signal comprises the response of said sensor to a temporally-determined variation in the concentration of said vapor at said sensor surface. Thus, Applicants respectfully assert that claims 7 and 9 are not unpatentable under 35 U.S.C. §103(a) over Stetter '348 in view of Gough '798.

***E. Claims 7 and 8 (Stetter '348 and Fenner et al. '341)***

The Examiner rejected claims 7 and 9 under §35 U.S.C. 103(a) as being allegedly unpatentable over Stetter '348 in view of U.S. Patent 5,563,341 to Fenner *et al.* ("Fenner *et al.* '341). Fenner *et al.* '341 discloses a vapor pressure sensor which utilizes the

elongation properties of porous organic and inorganic materials to sense vapor pressure. Fenner *et al.* '341 describes the use of a vapor adsorbing coating to measure a change in vapor pressure by measuring shear forces as the vapor adsorbing coating expands and contracts upon adsorbing and desorbing vapor. Fenner *et al.* '341 describes that polyimides comprise materials which can respond to variations in vapor pressure and thus can be used as vapor adsorbing coatings.

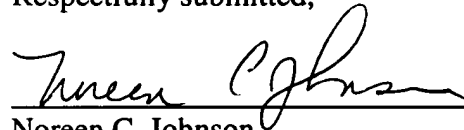
Like Gough, the sensors of Fenner *et al.*, '341 are used to measure the vapor of interest (water) *in situ* (*i.e.* at the sample surface), rather than vaporizing a sample in a vapor delivery line. There is no description in Fenner *et al.* '341 of a kinetic formation of a gas vapor pulse followed by dynamic measurement of a signal as a temporally modulated response. Thus, there is nothing in either reference alone, or in the references together, which suggests a method for rapidly screening volatile substances in a sample comprising the steps of introducing a volume of a sample into a vapor delivery line, volatilizing at least a portion of the sample as the volume is carried through the line, contacting at least a portion of the volatilized volume with a sensor, wherein the sensor is coated with a hard-soft block elastomer (claim 7) such as silicone polyimide (claim 8), such that the volatilized volume does not contact a substantially sorbent material before contacting the sensor; and monitoring the signal from the sensor element wherein said signal comprises the response of said sensor to a temporally-determined variation in the concentration of said vapor at said sensor surface. Thus, Applicants respectfully assert that claims 7 and 8 are not unpatentable under 35 U.S.C. 103(a) over Stetter '348 in view of Fenner *et al.*, '341.

### CONCLUSION

In view of the foregoing amendment and remarks, each of the claims remaining in the application is in condition for immediate allowance. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the outstanding rejections.

The Examiner is respectfully invited to telephone the undersigned at (336) 747-7541 to discuss any questions relating to the application.

Respectfully submitted,



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7/19, 2002

**VERSION SHOWING CHANGES MADE****In the Claims**

Please amend the claims as follows:

1. (Amended) A method for rapidly screening volatile substances in a sample, said method comprising the steps of:
  - (a) introducing a volume of said sample into a vapor delivery line;
  - (b) volatilizing at least a portion of said volume as said volume is carried through said vapor delivery line;
  - (c) contacting at least a portion of said volatilized volume with a sensor element, wherein said volume does not contact a substantially sorbent material before contacting said sensor element; and
  - (d) monitoring a signal from the sensor element wherein said signal comprises the response of said sensor to a temporally-determined variation in the concentration of said vapor at said sensor surface.
  
14. (Amended) The method of claim [10] 13, wherein said inert carrier gas is flowing through said vapor delivery line at a rate of between about 1 mL/min and about 1000 mL/min.

**In the Specification**

On page 6, please replace the second full paragraph with the following:

The output frequency of each sensor element is monitored by corresponding frequency counters 60 and stored in computer 70. In alternative embodiments, computer [60] 70 can control the flow of the carrier gas through flow controllers 80, which regulate

gas flow through both carrier stream line 90 and purge stream line 100. To allow for adequate evaporation upstream of sensor 50, carrier stream flow is preferably between about 1 mL/min and about 1000 mL/min and more preferably between about 150 mL/min and about 500 mL/min. Vapors exit the apparatus through exit port 110.

On page 10, please insert the following heading above the Table at the top of the page.

TABLE 2

On page 13, please replace TABLE 2 with the following:

TABLE [2] <u>3</u>			
Sample #	Benzene, mL	Acetonitrile, mL	Phenol, g
1	5	5	0
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